Photon Maps at Square USA

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SIGGRAPH Course #38, 2001

Contents

- Were photon maps used for the movie *Final Fantasy: The Spirits Within* ?

- Was global illumination used ?

- How are photon maps currently being used at Square USA ?

Photon map caustics in FF movie

Maya photon map caustic plug-in [Jos Stam]

Global illumination in FF movie

- Used by some TDs to generate lighting references (simplified geometry, single frame): BMRT, Lightscape, ...

- Not used directly for rendering (none of the used renderers can do global illumination)

Global illumination in FF movie

- Realistic lighting with many fake light sources ("bounce lights"): tedious

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Global illumination in future movies

Goals:

- Realistic lighting w/o tedious manual labor

- Global illumination a useful tool for production (use as basis)

In-house renderer: Kilauea

- Massively parallel
- Photon maps w/ "tricks"
- Developed over past 3 years
- Currently being tested in production
- Will be used for future projects

Kilauea images

More info

- Course #40 "Practical parallel processing for todays rendering challenges" by Toshi Kato
- www.squareusa.com/kilauea

Conclusion

- Photon maps were used for caustics in *Final Fantasy: The Spirits Within*
- Photon maps will be used for global illumination in future projects at Square USA
- See course #40 this afternoon

Acknowledgments

- Gary Mundell